

What is claimed is:

1. A method for generating a repertory of nucleic acids of *tuf*, *fus*, *atpD* and/or *recA* genes from which are derived probes or primers, or both, useful for the detection of one, more than one related microorganisms, or substantially all microorganisms of a group selected from algae, archaea, bacteria, fungi and parasites, which comprises the step of:

- amplifying the nucleic acids of a plurality of determined algal, archaeal, bacterial, fungal and parasitical species with any combination of the primer pairs defined in SEQ ID NOs.: 543, 556-574, 636-655, 664, 681-683, 694, 696-697, 699-700, 708, 812-815, 911-917, 919-922, 935-938, 1203-1207, 1212-1213, 1221-1229, 1605-1606, 1974-1984, 1999-2003, 2282-2285.

2. A method for generating a repertory of nucleic acid sequences, which comprises the steps of:

- reproducing the method of claim 1, and
- adding the step of:
 - sequencing said nucleic acids.

3. A method for generating sequences of probes, or primers, or both, useful for the detection of one, more than one related microorganisms, or substantially all microorganisms of a group selected from algae, archaea, bacteria, fungi and parasites, which comprises the steps of:

- reproducing the method of claim 2, and
- adding the steps of:
 - aligning a subset of nucleic acid sequences of said repertory,
 - locating nucleic acid stretches that are present in the nucleic acids of strains or representatives of said one, more than one related microorganisms, or substantially all microorganisms of said group, and not present in the nucleic acid sequences of other microorganisms, and

• deriving consensus nucleic acid sequences useful as probes or primers from said stretches.

4. A bank of nucleic acids comprising the repertory of nucleic acids obtained from the method of claim 1.

5. A bank of nucleic acid sequences comprising the repertory of nucleic acid sequences obtained from the method of claim 2.

6. A method for generating sequences of probes, or primers, or both, useful for the detection of one, more than one related microorganisms, or substantially all microorganisms of a group selected from algae, archaea, bacteria, fungi and parasites, which comprises the steps of:

- aligning a subset of nucleic acid sequences of the bank as defined in claim 5,

- locating nucleic acid sequence stretches that are present in the nucleic acid sequences of strains or representatives of said one, more than one related microorganisms, or substantially all microorganisms of said group, and not present in the nucleic acid sequences of other microorganisms, and

- deriving consensus nucleic acid sequences useful as probes or primers from said stretches.

7. A method for generating probes, or primers or both, useful for the detection of one, more than one related microorganisms, or substantially all microorganisms of a group selected from algae, archaea, bacteria, fungi and parasites, which comprises the steps of:

- reproducing the method of claim 3 or 6, and

- adding the step of:

• synthesising said probes or primers upon the nucleic acid sequences thereof.

8. A nucleic acid used for universal detection of any one of alga, archaeon, bacterium, fungus and parasite which is obtained from the method of claim 7.

9. A nucleic acid used for universal detection as set forth in claim 8, which has a nucleic acid sequence of at least 12 nucleotides capable of hybridizing with said any one of alga, archaeon, bacterium, fungus and parasite and with any one of SEQ ID NOs.: 543, 556-574, 636-655, 658-661, 664, 681-683, 694, 696, 697, 699, 700, 708, 812-815, 911-917, 919-922, 935-938, 1203-1207, 1212-1213, 1221-1229, 1605-1606, 1974-1984, 1999-2003, 2282-2285.

10. A nucleic acid used for the specific and ubiquitous detection and for identification of any one of a algal, archaeal, bacterial, fungal and parasitital species, genus, family and group, which is obtained from the method of claim 7.

11. A nucleic acid as set forth in claim 10 having any one of the nucleotide sequences which are defined in SEQ ID NOs.:

539, 540	for the detection and/or identification of <i>Mycobacteriaceae</i> family
541, 542, 544, 2121	for the detection and/or identification of Pseudomonads group
545, 546	for the detection and/or identification of <i>Corynebacterium</i> sp.
547, 548, 1202	for the detection and/or identification of <i>Streptococcus</i> sp.
549, 550, 582, 583, 625, 626, 627, 628,	for the detection and/or identification of <i>Streptococcus agalactiae</i>
1199	
551, 552, 2166, 2173, 2174, 2175, 2176, 2177, 2178, 2179	for the detection and/or identification of <i>Neisseria gonorrhoeae</i>
553, 575, 605, 606, 707, 1175, 1176	for the detection and/or identification of <i>Staphylococcus</i> sp.
554, 555, 2213	for the detection and/or identification of <i>Chlamydia trachomatis</i>

576, 631, 632, 633,	for the detection and/or identification of <i>Candida</i> sp.
634, 635, 1163,	
1164, 1167, 2076,	
2108, 2109	
577, 1156, 1160	for the detection and/or identification of <i>Candida albicans</i>
2073	
578, 1166, 1168,	for the detection and/or identification of <i>Candida dubliniensis</i>
2074	
579, 2168	for the detection and/or identification of <i>Escherichia coli</i>
580, 603, 1174,	for the detection and/or identification of <i>Enterococcus</i>
1236, 1238, 2289,	
2290, 2291	<i>faecalis</i>
581	for the detection and/or identification of <i>Haemophilus</i>
	<i>influenzae</i>
584, 585, 586, 587,	for the detection and/or identification of <i>Staphylococcus</i>
588, 1232, 1234,	
2186	<i>aureus</i>
589, 590, 591, 592,	for the detection and/or identification of <i>Staphylococcus</i>
593	<i>epidermidis</i>
594, 595	for the detection and/or identification of <i>Staphylococcus</i>
	<i>haemolyticus</i>
596, 597, 598	for the detection and/or identification of <i>Staphylococcus</i>
	<i>hominis</i>
599, 600, 601, 695,	for the detection and/or identification of <i>Staphylococcus</i>
1208, 1209	<i>saprophyticus</i>
602, 1235, 1237,	for the detection and/or identification of <i>Enterococcus</i>
1696, 1697, 1698,	
1699, 1700, 1701,	<i>faecium</i>
2286, 2287	
604	for the detection and/or identification of <i>Enterococcus</i>
	<i>gallinarum</i>
620, 1122	for the detection and/or identification of <i>Enterococcus</i>
	<i>casseliflavus</i> , <i>E. flavescentis</i> and <i>E. gallinarum</i>
629, 630, 2085,	for the detection and/or identification of <i>Chlamydia</i>
2086, 2087, 2088,	
2089, 2090, 2091,	<i>pneumoniae</i>
2092	

636, 637, 638, 639,
640, 641, 642

for the detection and/or identification of at least the following:

Abiotrophia adiacens, Abiotrophia defectiva, Acinetobacter baumannii, Acinetobacter lwoffi, Aerococcus viridans, Bacillus anthracis, Bacillus cereus, Bacillus subtilis, Brucella abortus, Burkholderia cepacia, Citrobacter diversus, Citrobacter freundii, Enterobacter aerogenes, Enterobacter agglomerans, Enterobacter cloacae, Enterococcus avium, Enterococcus casseliflavus, Enterococcus dispar, Enterococcus durans, Enterococcus faecalis, Enterococcus faecium, Enterococcus flavescentis, Enterococcus gallinarum, Enterococcus mundtii, Enterococcus raffinosus, Enterococcus solitarius, Escherichia coli, Gemella morbillorum, Haemophilus ducreyi, Haemophilus haemolyticus, Haemophilus influenzae, Haemophilus parahaemolyticus, Haemophilus parainfluenzae, Hafnia alvei, Kingella kingae, Klebsiella oxytoca, Klebsiella pneumoniae, Legionella pneumophila, Megamonas hypermegale, Moraxella atlantae, Moraxella catarrhalis, Morganella morganii, Neisseria gonorrhoeae, Neisseria meningitidis, Pasteurella aerogenes, Pasteurella multocida, Peptostreptococcus magnus, Proteus mirabilis, Providencia alcalifaciens, Providencia rettgeri, Providencia rustigianii, Providencia stuartii, Pseudomonas aeruginosa, Pseudomonas fluorescens, Pseudomonas stutzeri, Salmonella bongori, Salmonella choleraesuis, Salmonella enteritidis, Salmonella gallinarum, Salmonella typhimurium, Serratia liquefaciens, Serratia marcescens, Shigella flexneri, Shigella sonnei, Staphylococcus aureus, Staphylococcus capitis, Staphylococcus epidermidis, Staphylococcus haemolyticus, Staphylococcus hominis, Staphylococcus lugdunensis, Staphylococcus saprophyticus, Staphylococcus simulans, Staphylococcus warneri, Stenotrophomonas maltophilia, Streptococcus acidominimus, Streptococcus agalactiae, Streptococcus anginosus, Streptococcus bovis, Streptococcus constellatus, Streptococcus cricetus, Streptococcus cristatus, Streptococcus dysgalactiae, Streptococcus equi, Streptococcus ferus, Streptococcus gordonii, Streptococcus intermedius, Streptococcus macacae, Streptococcus mitis, Streptococcus mutans, Streptococcus oralis, Streptococcus parasanguinis, Streptococcus parauberis, Streptococcus pneumoniae, Streptococcus pyogenes, Streptococcus ratti, Streptococcus salivarius, Streptococcus sanguinis, Streptococcus sobrinus, Streptococcus uberis, Streptococcus vestibularis, Vibrio cholerae, Yersinia enterocolitica, Yersinia pestis, Yersinia pseudotuberculosis.

656, 657, 271,

for the detection and/or identification of *Enterococcus* sp.

1136, 1137

701, 702

for the detection and/or identification of *Leishmania* sp.

703, 704, 705, 706, for the detection and/or identification of *Entamoeba* sp.
793
794, 795 for the detection and/or identification of *Trypanosoma cruzi*
796, 797, 808, 809, for the detection and/or identification of *Clostridium* sp.
810, 811
798, 799, 800, 801, for the detection and/or identification of *Cryptosporidium*
802, 803, 804, 805, *parvum*
806, 807
816, 817, 818, 819 for the detection and/or identification of *Giardia* sp.
820, 821, 822 for the detection and/or identification of *Trypanosoma*
brucei
823, 824 for the detection and/or identification of *Trypanosoma* sp.
825, 826 for the detection and/or identification of *Bordetella* sp.
923, 924, 925, 926, for the detection and/or identification of *Trypanosomatidae*
927, 928 family
933, 934 for the detection and/or identification of *Enterobacteriaceae*
group
994, 995, 996, 997, for the detection and/or identification of *Streptococcus*
998, 999, 1000, *pyogenes*
1001, 1200, 1210,
1211
1157, 2079, 2118 for the detection and/or identification of *Candida*
parapsilosis
1158, 1159, 2078, for the detection and/or identification of *Candida glabrata*
2110, 2111
1160, 2077, 2119, for the detection and/or identification of *Candida tropicalis*
2120
1161, 2075, 2112, for the detection and/or identification of *Candida krusei*
2113, 2114
1162 for the detection and/or identification of *Candida guilliermondii*
1162, 2080, 2115 for the detection and/or identification of *Candida lusitaniae*
2116, 2117
1165 for the detection and/or identification of *Candida zeylanoides*
1201 for the detection and/or identification of *Streptococcus*
pneumoniae

1233	for the detection and/or identification of <i>Staphylococcus</i> sp. other than <i>S. aureus</i>
1329, 1330, 1331, 1332, 2167, 2281	for the detection and/or identification of <i>Klebsiella pneumoniae</i>
1661, 1665	for the detection and/or identification of <i>Escherichia coli</i> and <i>Shigella</i> sp.
1690, 1691, 1692, 1693, 2169	for the detection and/or identification of <i>Acinetobacter baumanii</i>
1694, 1695, 2122	for the detection and/or identification of <i>Pseudomonas aeruginosa</i>
1971, 1972, 1973	for the detection and/or identification of <i>Cryptococcus</i> sp.
2081, 2082, 2083	for the detection and/or identification of <i>Legionella</i> sp.
2084	for the detection and/or identification of <i>Legionella pneumophila</i>
2093, 2094, 2095, 2096	for the detection and/or identification of <i>Mycoplasma pneumoniae</i>
2106, 2107	for the detection and/or identification of <i>Cryptococcus neoformans</i>
2131, 2132, 2133	for the detection and/or identification of <i>Campylobacter jejuni</i> and <i>C. coli</i>
2134, 2135, 2136	for the detection and/or identification of <i>Bacteroides fragilis</i>
2170	for the detection and/or identification of <i>Abiotrophia adiacens</i>
2171	for the detection and/or identification of <i>Gemella</i> sp.
2172	for the detection and/or identification of <i>Enterococcus</i> sp., <i>Gemella</i> sp., <i>A. adiacens</i>
2180, 2181, 2182	for the detection and/or identification of <i>Bordetella pertussis</i> .

12. A method for detecting the presence in a test sample of a microorganism that is an alga, archaeum, bacterium, fungus or parasite, which comprises:

a) putting in contact any test sample *tuf* or *atpD* or *recA* nucleic acids and nucleic acid primers and/or probes, said primers and/or probes having

been selected to be sufficiently complementary to hybridize to one or more *tuf* or *atpD* or *recA* nucleic acids that are specific to said group of microorganisms;

b) allowing the primers and/or probes and any test sample *tuf* or *atpD* or *recA* nucleic acids to hybridize under specified conditions such as said primers and/or probes hybridize to the *tuf* or *atpD* or *recA* nucleic acids of said microorganism and does not detectably hybridize to *tuf* or *atpD* or *recA* sequences from other microorganisms; and,

c) testing for hybridization of said primers and/or probes to any test sample *tuf* or *atpD* or *recA* nucleic acids.

13. The method of claim 12 wherein c) is based on a nucleic acid target amplification method.

14. The method of claim 12 wherein c) is based on a signal amplification method.

15. The method of any one of claims 12 to 14 wherein said primers and/or probes that are sufficiently complementary are perfectly complementary.

16. The method of any one of claims 12 to 14 wherein said primers and/or probes that are sufficiently complementary are not perfectly complementary.

17. A method for the specific detection and/or identification of a microorganism that is an algal, archaeal, bacterial, fungal or parasitical species, genus, family or group in any sample, using a panel of probes or amplification primers or both, each individual probe or primer being derived from a nucleic acid which has a nucleotide sequence of at least 12 nucleotides in length capable of hybridizing with the nucleic acids of said microorganism and with a nucleic acid having any one of the nucleotide sequences defined in SEQ ID NOs.:

539, 540 for the detection and/or identification of *Mycobacteriaceae* family
541, 542, 544, 2121 for the detection and/or identification of *Pseudomonads* group

545, 546	for the detection and/or identification of <i>Corynebacterium</i> sp.
547, 548, 1202	for the detection and/or identification of <i>Streptococcus</i> sp.
549, 550, 582, 583, 625, 626, 627, 628, 1199	for the detection and/or identification of <i>Streptococcus agalactiae</i>
551, 552, 2166, 2173, 2174, 2175, 2176, 2177, 2178, 2179	for the detection and/or identification of <i>Neisseria gonorrhoeae</i>
553, 575, 605, 606, 707, 1175, 1176	for the detection and/or identification of <i>Staphylococcus</i> sp.
554, 555, 2213	for the detection and/or identification of <i>Chlamydia trachomatis</i>
576, 631, 632, 633, 634, 635, 1163, 1164, 1167, 2076, 2108, 2109	for the detection and/or identification of <i>Candida</i> sp.
577, 1156, 1160 2073	for the detection and/or identification of <i>Candida albicans</i>
578, 1166, 1168, 2074	for the detection and/or identification of <i>Candida dubliniensis</i>
579, 2168	for the detection and/or identification of <i>Escherichia coli</i>
580, 603, 1174, 1236, 1238, 2289, 2290, 2291	for the detection and/or identification of <i>Enterococcus faecalis</i>
581	for the detection and/or identification of <i>Haemophilus influenzae</i>
584, 585, 586, 587, 588, 1232, 1234, 2186	for the detection and/or identification of <i>Staphylococcus aureus</i>
589, 590, 591, 592, 593	for the detection and/or identification of <i>Staphylococcus epidermidis</i>
594, 595	for the detection and/or identification of <i>Staphylococcus haemolyticus</i>
596, 597, 598	for the detection and/or identification of <i>Staphylococcus hominis</i>

599, 600, 601, 695, for the detection and/or identification of *Staphylococcus saprophyticus*
 1208, 1209
 602, 1235, 1237, for the detection and/or identification of *Enterococcus faecium*
 1696, 1697, 1698,
 1699, 1700, 1701,
 2286, 2287
 604 for the detection and/or identification of *Enterococcus gallinarum*
 620, 1122 for the detection and/or identification of *Enterococcus casseliflavus*, *E. flavescent* and *E. gallinarum*
 629, 630, 2085, for the detection and/or identification of *Chlamydia pneumoniae*
 2086, 2087, 2088,
 2089, 2090, 2091,
 2092
 636, 637, 638, 639, for the detection and/or identification of at least the following:
 640, 641, 642 *Abiotrophia adiacens*, *Abiotrophia defectiva*, *Acinetobacter baumannii*, *Acinetobacter lwoffi*, *Aerococcus viridans*, *Bacillus anthracis*, *Bacillus cereus*, *Bacillus subtilis*, *Brucella abortus*, *Burkholderia cepacia*, *Citrobacter diversus*, *Citrobacter freundii*, *Enterobacter aerogenes*, *Enterobacter agglomerans*, *Enterobacter cloacae*, *Enterococcus avium*, *Enterococcus casseliflavus*, *Enterococcus dispar*, *Enterococcus durans*, *Enterococcus faecalis*, *Enterococcus faecium*, *Enterococcus flavescent*, *Enterococcus gallinarum*, *Enterococcus mundtii*, *Enterococcus raffinosus*, *Enterococcus solitarius*, *Escherichia coli*, *Gemella morbillorum*, *Haemophilus ducreyi*, *Haemophilus haemolyticus*, *Haemophilus influenzae*, *Haemophilus parahaemolyticus*, *Haemophilus parainfluenzae*, *Hafnia alvei*, *Kingella kingae*, *Klebsiella oxytoca*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Megamonas hypermegale*, *Moraxella atlantae*, *Moraxella catarrhalis*, *Morganella morganii*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella aerogenes*, *Pasteurella multocida*, *Peptostreptococcus magnus*, *Proteus mirabilis*, *Providencia alcalifaciens*, *Providencia rettgeri*, *Providencia rustigianii*, *Providencia stuartii*, *Pseudomonas aeruginosa*, *Pseudomonas fluorescens*, *Pseudomonas stutzeri*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enteritidis*, *Salmonella gallinarum*, *Salmonella typhimurium*, *Serratia liquefaciens*, *Serratia marcescens*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus capitis*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Staphylococcus hominis*, *Staphylococcus lugdunensis*, *Staphylococcus saprophyticus*, *Staphylococcus simulans*, *Staphylococcus warneri*, *Stenotrophomonas*

malophilia, *Streptococcus acidominimus*, *Streptococcus agalactiae*, *Streptococcus anginosus*, *Streptococcus bovis*, *Streptococcus constellatus*, *Streptococcus cricetus*, *Streptococcus cristatus*, *Streptococcus dysgalactiae*, *Streptococcus equi*, *Streptococcus ferus*, *Streptococcus gordonii*, *Streptococcus intermedius*, *Streptococcus macacae*, *Streptococcus mitis*, *Streptococcus mutans*, *Streptococcus oralis*, *Streptococcus parasanguinis*, *Streptococcus parauberis*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Streptococcus ratti*, *Streptococcus salivarius*, *Streptococcus sanguinis*, *Streptococcus sobrinus*, *Streptococcus uberis*, *Streptococcus vestibularis*, *Vibrio cholerae*, *Yersinia enterocolitica*, *Yersinia pestis*, *Yersinia pseudotuberculosis*.

656, 657, 271, for the detection and/or identification of *Enterococcus* sp.
 1136, 1137
 701, 702 for the detection and/or identification of *Leishmania* sp.
 703, 704, 705, 706, for the detection and/or identification of *Entamoeba* sp.
 793
 794, 795 for the detection and/or identification of *Trypanosoma cruzi*
 796, 797, 808, 809, for the detection and/or identification of *Clostridium* sp.
 810, 811
 798, 799, 800, 801, for the detection and/or identification of *Cryptosporidium*
 802, 803, 804, 805, *parvum*
 806, 807
 816, 817, 818, 819 for the detection and/or identification of *Giardia* sp.
 820, 821, 822 for the detection and/or identification of *Trypanosoma*
brucei
 823, 824 for the detection and/or identification of *Trypanosoma* sp.
~~825, 826~~ for the detection and/or identification of *Bordetella* sp.
 923, 924, 925, 926, for the detection and/or identification of *Trypanosomatidae*
 927, 928 family
 933, 934 for the detection and/or identification of *Enterobacteriaceae*
 group
 994, 995, 996, 997, for the detection and/or identification of *Streptococcus*
 998, 999, 1000, *pyogenes*
 1001, 1200, 1210,
 1211
 1157, 2079, 2118 for the detection and/or identification of *Candida*
parapsilosis

1158, 1159, 2078, 2110, 2111	for the detection and/or identification of <i>Candida glabrata</i>
1160, 2077, 2119, 2120	for the detection and/or identification of <i>Candida tropicalis</i>
1161, 2075, 2112, 2113, 2114	for the detection and/or identification of <i>Candida krusei</i>
1162	for the detection and/or identification of <i>Candida guilliermondii</i>
1162, 2080, 2115 2116, 2117	for the detection and/or identification of <i>Candida lusitaniae</i>
1165	for the detection and/or identification of <i>Candida zeylanoides</i>
1201	for the detection and/or identification of <i>Streptococcus pneumoniae</i>
1233	for the detection and/or identification of <i>Staphylococcus</i> sp. other than <i>S. aureus</i>
1329, 1330, 1331, 1332, 2167, 2281	for the detection and/or identification of <i>Klebsiella pneumoniae</i>
1661, 1665	for the detection and/or identification of <i>Escherichia coli</i> and <i>Shigella</i> sp.
1690, 1691, 1692, 1693, 2169	for the detection and/or identification of <i>Acinetobacter baumanii</i>
1694, 1695, 2122	for the detection and/or identification of <i>Pseudomonas aeruginosa</i>
1971, 1972, 1973	for the detection and/or identification of <i>Cryptococcus</i> sp.
2081, 2082, 2083	for the detection and/or identification of <i>Legionella</i> sp.
2084	for the detection and/or identification of <i>Legionella pneumophila</i>
2093, 2094, 2095, 2096	for the detection and/or identification of <i>Mycoplasma pneumoniae</i>
2106, 2107	for the detection and/or identification of <i>Cryptococcus neoformans</i>
2131, 2132, 2133	for the detection and/or identification of <i>Campylobacter jejuni</i> and <i>C. coli</i>
2134, 2135, 2136	for the detection and/or identification of <i>Bacteroides fragilis</i>

2170 for the detection and/or identification of *Abiotrophia adiacens*
2171 for the detection and/or identification of *Gemella* sp.
2172 for the detection and/or identification of *Enterococcus* sp.,
Gemella sp., *A. adiacens*
2180, 2181, 2182 for the detection and/or identification of *Bordetella pertussis*,

said method comprising the step of contacting the nucleic acids of the sample with said primers or probes under suitable conditions of hybridization or of amplification and detecting the presence of hybridized probes or amplified products as an indication of the presence of said specificalgal, archaeal, bacterial, fungal or parasitical species, genus, family or group.

18. A method for the universal detection of any bacterium, fungus or parasite in a sample, using a panel of probes or amplification primers or both, each individual probe or primer being derived from a nucleic acid as defined in claims 8 or 9, the method comprising the step of contacting the nucleic acids of the sample with said primers or probes under suitable conditions of hybridization or of amplification and detecting the presence of any alga, archaeon, bacterium, fungus or parasite.

19. A method as set forth in claim 17 or 18, which further comprises probes or primers, or both, for the detection of at least one antimicrobial agent resistance gene.

20. A method as set forth in claim 17 or 18, which further comprises probes or primers, or both, for the detection of at least one toxin gene.

21. A method as set forth in claim 19 or 20, wherein the probes or primers for the detection of said antimicrobial agent resistance gene or toxin gene have at least 12 nucleotides in length capable of hybridizing with an antimicrobial agent resistance gene and/or toxin gene selected from SEQ ID NOs.:

1078, 1079, 1085 for the detection and/or identification of the *E. coli* Shiga-like toxin 2 (*stx*₂) gene

1080, 1081, 1084, for the detection and/or identification of the *E. coli* Shiga-like toxin 1 (*stx*₁) gene
2012
1082, 1083 for the detection and/or identification of *E. coli* Shiga-like toxins 1 and 2 (*stx*) genes
1086, 1087, 1088, for the detection and/or identification of the *vanA* resistance gene
1089, 1090, 1091,
1092, 1170, 1239,
1240, 2292
1095, 1096, 1171, for the detection and/or identification of the *vanB* resistance gene
1241, 2294, 2295
1111, 1112, 1113, for the detection and/or identification of the *vanAB* resistance genes
1114, 1115, 1116,
1118, 1119, 1120,
1121, 1123, 1124
1103, 1104, 1109, for the detection and/or identification of the *vanC1* resistance gene
1110
1105, 1106, 1107, for the detection and/or identification of the *vanC2* and
1108 *vanC3* resistance genes
1097, 1098, 1099, for the detection and/or identification of the *vanC1*, *vanC2* and
1100, 1101, 1102 *vanC3* resistance genes
1150, 1153, 1154, for the detection and/or identification of the *vanAXY* resistance genes
1155
1094, 1125, 1126, for the detection and/or identification of the *S. pneumoniae*
1127, 1128, 1129, *pbp1a* gene
1130, 1131, 1132,
1133, 1134, 1135,
1192, 1193, 1194,
1195, 1196, 1197,
1214, 1216, 1217,
1218, 1219, 1220,
2015, 2016, 2017,
2018, 2019, 2020,
2021, 2022, 2023,
2024, 2025, 2026,
2027, 2028, 2029,
2030, 2031, 2032,
2033, 2034, 2035,
2036, 2037, 2038,
2039

1142, 1143, 1144, for the detection and/or identification of the *S. pneumoniae* *pbp2b* gene
1145
1146, 1147, 1148, for the detection and/or identification of the *S. pneumoniae* *pbp2x* gene
1149
1177, 1231 for the detection and/or identification of the *mecA* resistance gene
1290, 1291, 1292, for the detection and/or identification of the *gyrA* resistance gene
1293, 1294, 1295,
1296, 1297, 1298,
1333, 1334, 1335,
1340, 1341, 1936,
1937, 1940, 1942,
1943, 1945, 1946,
1947, 1948, 1949,
2040, 2041, 2042,
2043, 2250, 2251
1301, 1302, 1303, for the detection and/or identification of the *gyrB* resistance gene
1304, 1305, 1306
1308, 1309, 1310, for the detection and/or identification of the *parC* resistance gene
1311, 1312, 1313,
1314, 1315, 1316,
1317, 1318, 1319,
1336, 1337, 1338,
1339, 1342, 1343,
1934, 1935, 1938,
1939, 1941, 1944,
1950, 1951, 1952,
1953, 1955, 2044,
2045, 2046
1322, 1323, 1324, for the detection and/or identification of the *parE* resistance gene
1325, 1326, 1327
1344, 1345, 1346, for the detection and/or identification of the *aac(2')-Ia* resistance gene
1347
1349, 1350 for the detection and/or identification of the *aac(3')-Ib* resistance gene
1352, 1353, 1354, for the detection and/or identification of the *aac(3')-IIb* resistance gene
1355
1357, 1358, 1359, for the detection and/or identification of the *aac(3')-IVa* resistance gene
1360
1362, 1363, 1364, for the detection and/or identification of the *aac(3')-VIa* resistance gene
1365

1367, 1368, 1369, for the detection and/or identification of the *aac(6')-Ia*
1370 resistance gene

1372, 1373, 1374, for the detection and/or identification of the *aac(6')-Ic*
1375 resistance gene

1377, 1378, 1379, for the detection and/or identification of the *ant(3')-Ia*
1380 resistance gene

1382, 1383, 1384, for the detection and/or identification of the *ant(4')-Ia*
1385 resistance gene

1387, 1388, 1389, for the detection and/or identification of the *aph(3')-Ia*
1390 resistance gene

1392, 1393, 1394, for the detection and/or identification of the *aph(3')-IIa*
1395 resistance gene

1397, 1398, 1399, for the detection and/or identification of the *aph(3')-IIIa*
1400 resistance gene

1402, 1403, 1404, for the detection and/or identification of the *aph(3')-VIa*
1405, 2252 resistance gene

1407, 1408, 1409 for the detection and/or identification of the *blaCARB*
1410 resistance gene

1412, 1413, 1414, for the detection and/or identification of the *blaCMY-2*
1415 resistance gene

1417, 1418 for the detection and/or identification of the *blaCTX-M-1* and
blaCTX-M-2 resistance genes

1419, 1420, 1421, for the detection and/or identification of the *blaCTX-M-1*
1422 resistance gene

1424, 1425, 1426, for the detection and/or identification of the *blaCTX-M-2*
1427 resistance gene

1429, 1430, 1431, for the detection and/or identification of the *blaIMP*
1432 resistance gene

1434, 1435 for the detection and/or identification of the *blaOXA2*
resistance gene

1436, 1437 for the detection and/or identification of the *blaOXA10*
resistance gene

1440, 1441 for the detection and/or identification of the *blaPER-1*
resistance gene

1443, 1444 for the detection and/or identification of the *blaPER-2* resistance gene

1446, 1447, 1448, 1449 for the detection and/or identification of the *blaPER-1* and *blaPER-2* resistance genes

1450, 1451 for the detection and/or identification of the *dfrA* resistance gene

1453, 1454, 1455, 1456 for the detection and/or identification of the *dhfrIa* and *dhfrXV* resistance genes

1457, 1458, 1459, 1460, 2253 for the detection and/or identification of the *dhfrIa* resistance gene

1462, 1463, 1464, 1465 for the detection and/or identification of the *dhfrIb* and *dhfrV* resistance genes

1466, 1467, 1468, 1469 for the detection and/or identification of the *dhfrIb* resistance gene

1471, 1472, 1473, 1474 for the detection and/or identification of the *dhfrV* resistance gene

1476, 1477, 1478, 1479 for the detection and/or identification of the *dhfrVI* resistance gene

1481, 1482, 1483, 1484 for the detection and/or identification of the *dhfrVII* and *dhfrXVII* resistance genes

1485, 1486, 1487, 1488 for the detection and/or identification of the *dhfrVII* resistance gene

1490, 1491, 1492, 1493 for the detection and/or identification of the *dhfrVIII* resistance gene

1495, 1496, 1497, 1498 for the detection and/or identification of the *dhfrIX* resistance gene

1500, 1501, 1502, 1503 for the detection and/or identification of the *dhfrXII* resistance gene

1505, 1506 for the detection and/or identification of the *dhfrXIII* resistance gene

1508, 1509, 1510, 1511 for the detection and/or identification of the *dhfrXV* resistance gene

1513, 1514, 1515, 1516 for the detection and/or identification of the *dhfrXVII* resistance gene

1528, 1529 for the detection and/or identification of the *ereA* and *ereA2* resistance genes

1531, 1532, 1533, 1534 for the detection and/or identification of the *ereB* resistance gene

1536, 1537, 1538, 1539 for the detection and/or identification of the *linA* and *linA'* resistance genes

1541, 1542, 1543, 1544 for the detection and/or identification of the *linB* resistance gene

1546, 1547 for the detection and/or identification of the *mefA* resistance gene

1549, 1550 for the detection and/or identification of the *mefE* resistance gene

1552, 1553, 1554, 1555 for the detection and/or identification of the *mefA* and *mefE* resistance genes

1556, 1557, 1558, 1559 for the detection and/or identification of the *mphA* and *mphK* resistance genes

1581, 1582, 1583, 1584 for the detection and/or identification of the *satG* resistance gene

1586, 1587, 1588, 1589, 2254 for the detection and/or identification of the *tetM* resistance gene

1591, 1592, 1593, 2297 for the detection and/or identification of the *vanD* resistance gene

1595, 1596, 1597, 1598 for the detection and/or identification of the *vanE* resistance gene

1609, 1610, 1611, 1612 for the detection and/or identification of the *vatB* resistance gene

1614, 1615, 1616, 1617 for the detection and/or identification of the *vatC* resistance gene

1619, 1620, 1621, 1622 for the detection and/or identification of the *vga* resistance gene

1624, 1625, 1626, 1627 for the detection and/or identification of the *vgaB* resistance gene

1629, 1630, 1631, 1632 for the detection and/or identification of the *vgb* and *vgh* resistance genes

1634, 1635, 1636, 1637	for the detection and/or identification of the <i>vgbB</i> resistance gene
1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898	for the detection and/or identification of the <i>blaSHV</i> resistance gene
1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 2006, 2007, 2008, 2009, 2141	for the detection and/or identification of the <i>blaTEM</i> resistance gene
1961, 1962, 1963, 1964	for the detection and/or identification of the <i>sulII</i> resistance gene
1966, 1967, 1968, 1969	for the detection and/or identification of the <i>tetB</i> resistance gene
2065, 2066, 2067, 2068, 2069, 2070, 2071	for the detection and/or identification of the <i>rpoB</i> resistance gene
2098, 2099, 2100	for the detection and/or identification of the <i>inhA</i> resistance gene
2102, 2103, 2104	for the detection and/or identification of the <i>embB</i> resistance gene
2123, 2124, 2125	for the detection and/or identification of the <i>C. difficile cdtA</i> toxin gene
2126, 2127, 2128	for the detection and/or identification of the <i>C. difficile cdtB</i> toxin gene
2142, 2143	for the detection and/or identification of the <i>mupA</i> resistance gene
2145, 2146	for the detection and/or identification of the <i>catI</i> resistance gene
2148, 2149	for the detection and/or identification of the <i>catII</i> resistance gene

2151, 2152 for the detection and/or identification of the *catIII* resistance gene
2154, 2155 for the detection and/or identification of the *catP* resistance gene
2157, 2158, 2160, for the detection and/or identification of the *cat* resistance gene
2161
2163, 2164 for the detection and/or identification of the *ppflo*-like resistance gene.

22. A composition of matter comprising a specific nucleic acid as set forth in claim 10 or 11, which is specific for a bacterial, fungal or parasitical species, genus, family, or group, or a nucleic acid as set forth in claim 8 or 9 which is universal for a bacterium, fungus or parasite, or both specific and universal nucleic acids, in conjunction with a nucleic acid sequence of at least 12 nucleotides capable of hybridizing with an antimicrobial agent resistance gene and/or toxin gene.

23. A composition as set forth in claim 22, wherein the nucleic acid capable of hybridizing with an antimicrobial agent resistance gene and/or toxin gene is any one of:

1078, 1079, 1085 for the detection and/or identification of the *E. coli* Shiga-like toxin 2 (*stx*₂) gene
1080, 1081, 1084, for the detection and/or identification of the *E. coli* Shiga-like toxin 1 (*stx*₁) gene
2012
1082, 1083 for the detection and/or identification of *E. coli* Shiga-like toxins 1 and 2 (*stx*) genes
1086, 1087, 1088, for the detection and/or identification of the *vanA* resistance gene
1089, 1090, 1091,
1092, 1170, 1239,
1240, 2292
1095, 1096, 1171, for the detection and/or identification of the *vanB* resistance gene
1241, 2294, 2295
1111, 1112, 1113, for the detection and/or identification of the *vanAB* resistance genes
1114, 1115, 1116,
1118, 1119, 1120,
1121, 1123, 1124

1103, 1104, 1109, 1110 1105, 1106, 1107, 1108 1097, 1098, 1099, 1100, 1101, 1102 1150, 1153, 1154, 1155 1094, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1192, 1193, 1194, 1195, 1196, 1197, 1214, 1216, 1217, 1218, 1219, 1220, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039 1142, 1143, 1144, 1145 1146, 1147, 1148, 1149 1177, 1231	for the detection and/or identification of the <i>vanC1</i> resistance gene for the detection and/or identification of the <i>vanC2</i> and <i>vanC3</i> resistance genes for the detection and/or identification of the <i>vanC1</i> , <i>vanC2</i> and <i>vanC3</i> resistance genes for the detection and/or identification of the <i>vanAXY</i> resistance genes for the detection and/or identification of the <i>S. pneumoniae pbp1a</i> gene
1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1333, 1334, 1335, 1340, 1341, 1936, 1937, 1940, 1942, 1943, 1945, 1946, 1947, 1948, 1949, 2040, 2041, 2042, 2043, 2250, 2251	for the detection and/or identification of the <i>mechA</i> resistance gene for the detection and/or identification of the <i>gyrA</i> resistance gene

1301, 1302, 1303, 1304, 1305, 1306 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1336, 1337, 1338, 1339, 1342, 1343, 1934, 1935, 1938, 1939, 1941, 1944, 1950, 1951, 1952, 1953, 1955, 2044, 2045, 2046	for the detection and/or identification of the <i>gyrB</i> resistance gene for the detection and/or identification of the <i>parC</i> resistance gene
1322, 1323, 1324, 1325, 1326, 1327 1344, 1345, 1346, 1347 1349, 1350	for the detection and/or identification of the <i>parE</i> resistance gene for the detection and/or identification of the <i>aac(2')-Ia</i> resistance gene for the detection and/or identification of the <i>aac(3')-Ib</i> resistance gene for the detection and/or identification of the <i>aac(3')-IIb</i> resistance gene
1352, 1353, 1354, 1355 1357, 1358, 1359, 1360 1362, 1363, 1364, 1365 1367, 1368, 1369, 1370 1372, 1373, 1374, 1375 1377, 1378, 1379, 1380	for the detection and/or identification of the <i>aac(3')-IVa</i> resistance gene for the detection and/or identification of the <i>aac(3')-VIa</i> resistance gene for the detection and/or identification of the <i>aac(6')-Ia</i> resistance gene for the detection and/or identification of the <i>aac(6')-Ic</i> resistance gene for the detection and/or identification of the <i>ant(3')-Ia</i> resistance gene
1382, 1383, 1384, 1385 1387, 1388, 1389, 1390 1392, 1393, 1394, 1395 1397, 1398, 1399, 1400	for the detection and/or identification of the <i>ant(4')-Ia</i> resistance gene for the detection and/or identification of the <i>aph(3')-Ia</i> resistance gene for the detection and/or identification of the <i>aph(3')-IIa</i> resistance gene for the detection and/or identification of the <i>aph(3')-IIIa</i> resistance gene

1402, 1403, 1404, for the detection and/or identification of the *aph(3')-VIa*
1405, 2252 resistance gene

1407, 1408, 1409 for the detection and/or identification of the *blaCARB*
1410 resistance gene

1412, 1413, 1414, for the detection and/or identification of the *blaCMY-2*
1415 resistance gene

1417, 1418 for the detection and/or identification of the *blaCTX-M-1* and *blaCTX-M-2* resistance genes

1419, 1420, 1421, for the detection and/or identification of the *blaCTX-M-1*
1422 resistance gene

1424, 1425, 1426, for the detection and/or identification of the *blaCTX-M-2*
1427 resistance gene

1429, 1430, 1431, for the detection and/or identification of the *blaIMP*
1432 resistance gene

1434, 1435 for the detection and/or identification of the *blaOXA2*
resistance gene

1436, 1437 for the detection and/or identification of the *blaOXA10*
resistance gene

1440, 1441 for the detection and/or identification of the *blaPER-1*
resistance gene

1443, 1444 for the detection and/or identification of the *blaPER-2*
resistance gene

1446, 1447, 1448, for the detection and/or identification of the *blaPER-1* and
1449 *blaPER-2* resistance genes^{**}

1450, 1451 for the detection and/or identification of the *dfrA* resistance
gene

1453, 1454, 1455, for the detection and/or identification of the *dhfrIa* and
1456 *dhfrXV* resistance genes

1457, 1458, 1459, for the detection and/or identification of the *dhfrIa*
1460, 2253 resistance gene

1462, 1463, 1464, for the detection and/or identification of the *dhfrIb* and
1465 *dhfrV* resistance genes

1466, 1467, 1468, for the detection and/or identification of the *dhfrIb*
1469 resistance gene

1471, 1472, 1473, for the detection and/or identification of the *dhfrV* resistance
1474 gene

1476, 1477, 1478, for the detection and/or identification of the *dhfrVI*
1479 resistance gene

1481, 1482, 1483, for the detection and/or identification of the *dhfrVII* and
1484 *dhfrXVII* resistance genes

1485, 1486, 1487, for the detection and/or identification of the *dhfrVII*
1488 resistance gene

1490, 1491, 1492, for the detection and/or identification of the *dhfrVIII*
1493 resistance gene

1495, 1496, 1497, for the detection and/or identification of the *dhfrIX*
1498 resistance gene

1500, 1501, 1502, for the detection and/or identification of the *dhfrXII*
1503 resistance gene

1505, 1506 for the detection and/or identification of the *dhfrXIII*
resistance gene

1508, 1509, 1510, for the detection and/or identification of the *dhfrXV*
1511 resistance gene

1513, 1514, 1515, for the detection and/or identification of the *dhfrXVII*
1516 resistance gene

1528, 1529 for the detection and/or identification of the *ereA* and *ereA2*
resistance genes

1531, 1532, 1533, for the detection and/or identification of the *ereB* resistance
1534 ^{gene}
1536, 1537, 1538, for the detection and/or identification of the *linA* and *linA'*
1539 resistance genes

1541, 1542, 1543, for the detection and/or identification of the *linB* resistance
1544 gene

1546, 1547 for the detection and/or identification of the *mefA* resistance
gene

1549, 1550 for the detection and/or identification of the *mefE* resistance
gene

1552, 1553, 1554, for the detection and/or identification of the *mefA* and *mefE*
1555 resistance genes

1556, 1557, 1558, 1559	for the detection and/or identification of the <i>mphA</i> and <i>mphK</i> resistance genes
1581, 1582, 1583, 1584	for the detection and/or identification of the <i>satG</i> resistance gene
1586, 1587, 1588, 1589, 2254	for the detection and/or identification of the <i>tetM</i> resistance gene
1591, 1592, 1593, 2297	for the detection and/or identification of the <i>vanD</i> resistance gene
1595, 1596, 1597, 1598	for the detection and/or identification of the <i>vanE</i> resistance gene
1609, 1610, 1611, 1612	for the detection and/or identification of the <i>vatB</i> resistance gene
1614, 1615, 1616, 1617	for the detection and/or identification of the <i>vatC</i> resistance gene
1619, 1620, 1621, 1622	for the detection and/or identification of the <i>vga</i> resistance gene
1624, 1625, 1626, 1627	for the detection and/or identification of the <i>vgaB</i> resistance gene
1629, 1630, 1631, 1632	for the detection and/or identification of the <i>vgb</i> and <i>vgh</i> resistance genes
1634, 1635, 1636, 1637	for the detection and/or identification of the <i>vgbB</i> resistance gene
1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898	for the detection and/or identification of the <i>blaSHV</i> resistance gene
1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 2006, 2007, 2008, 2009, 2141	for the detection and/or identification of the <i>blaTEM</i> resistance gene
1961, 1962, 1963, 1964	for the detection and/or identification of the <i>sulII</i> resistance gene

1966, 1967, 1968, 1969	for the detection and/or identification of the <i>tetB</i> resistance gene
2065, 2066, 2067, 2068, 2069, 2070, 2071	for the detection and/or identification of the <i>rpoB</i> resistance gene
2098, 2099, 2100	for the detection and/or identification of the <i>inhA</i> resistance gene
2102, 2103, 2104	for the detection and/or identification of the <i>embB</i> resistance gene
2123, 2124, 2125	for the detection and/or identification of the <i>C. difficile cdtA</i> toxin gene
2126, 2127, 2128	for the detection and/or identification of the <i>C. difficile cdtB</i> toxin gene
2142, 2143	for the detection and/or identification of the <i>mupA</i> resistance gene
2145, 2146	for the detection and/or identification of the <i>catI</i> resistance gene
2148, 2149	for the detection and/or identification of the <i>catII</i> resistance gene
2151, 2152	for the detection and/or identification of the <i>catIII</i> resistance gene
2154, 2155	for the detection and/or identification of the <i>catP</i> resistance gene
2157, 2158, 2160, 2161	for the detection and/or identification of the <i>cat</i> resistance gene
2163, 2164	for the detection and/or identification of the <i>ppflo</i> -like resistance gene.

24. A nucleic acid having at least 12 nucleotides in length, capable of hybridizing with the nucleotide sequence of any one of the *tuf* sequences defined in SEQ ID NOs.: 1-73, 75-241, 399-457, 498-529, 612-618, 621-624, 675, 677, 717-736, 779-792, 840-855, 865, 868-888, 897-910, 932, 967-989, 992, 1266-1287, 1518-1526, 1561-1575, 1578-1580, 1662-1664, 1666-1667, 1669-1670, 1673-1683, 1685-1689, 1786-1843, 1874-1881, 1956-1960, 2183-2185, 2187-2188, 2193-2201, 2214-2249, 2255-2272.

25. A nucleic acid having at least 12 nucleotides in length, capable of hybridizing with the nucleotide sequence of any one of the *atpD* sequences defined in SEQ ID NOs.: 242-270, 272-398, 458-497, 530-538, 663, 667, 673, 674, 676, 678-680, 737-778, 827-832, 834-839, 856-862, 866-867, 889-896, 929-931, 941-966, 1245-1254, 1256-1265, 1527, 1576-1577, 1600-1604, 1638-1647, 1649-1660, 1671, 1684, 1844-1848, 1849-1865, 2189-2192.

26. A nucleic acid having at least 12 nucleotides in length, capable of hybridizing with the nucleotide sequence of any one of the *recA* sequences defined in SEQ ID NOs.: 990-991, 1003, 1288-1289, 1714, 1756-1763, 1866-1873 and 2202-2212.

27. A nucleic acid having at least 12 nucleotides in length, capable of selectively hybridizing with the nucleotide sequence of any one of the antimicrobial agent resistance gene sequences defined in SEQ ID NOs.: 1004-1075, 1255, 1607-1608, 1648, 1764-1785, 2013-2014, 2056-2064, 2273-2280.

28. The nucleic acid sequences of the nucleic acids of any one of claims 24 to 27.

29. The use of a nucleic acid having at least 12 nucleotides in length capable of hybridizing with the nucleic acids of any one of the antimicrobial agent resistance genes sequences defined in SEQ ID NOs.: 1004-1075, 1255, 1607-1608, 1648, 1764-1785, 2013-2014, 2056-2064, 2273-2280 for the detection and identification of microbial species.

30. The use of a nucleic acid having at least 12 nucleotides in length capable of hybridizing with the nucleic acids of any one of the toxin genes defined in SEQ ID NOs.: 1078-1085, 2012 and 2123 to 2128 for the detection and identification of microbial species.

31. A repertory of *hexA* nucleic acids used for the detection and/or identification of *Streptococcus pneumoniae*, which repertory is created by amplifying

the nucleic acids of any streptococcal species with any combination of primers SEQ ID NOs.: 1179, 1181 and 1182.

32. A repertory as defined in claim 31, which comprises the nucleic acids having a nucleotide sequence defined in SEQ ID NOs.: 1184 to 1191.

33. A repertory of nucleic acid sequences derived from the repertory of claim 31 or 32.

34. A nucleic acid used for the specific and ubiquitous detection and for identification of *Streptococcus pneumoniae*, which is derived from the repertory of claim 31.

35. A nucleic acid as set forth in claim 34 which has a nucleic acid sequence of at least 12 nucleotides capable of hybridizing with said any *Streptococcus pneumoniae* and with any one of SEQ ID NOs.: 1184 to 1187.

36. A nucleic acid as set forth in claim 34, which has a nucleic acid sequence of at least 12 nucleotides capable of hybridizing with the nucleic acids of *Streptococcus pneumoniae* and with any one of the nucleic acids having SEQ ID NOs.: 1179, 1180, 1181, 1182.

37. A peptide derived from the translation of the nucleic acids from the repertory obtained from the method of claim 1, 31 or 32, or of the nucleic acids defined in any one of claims 24 to 27, 35 and 36.

38. A peptide sequence derived from the peptide of claim 37.

39. A recombinant vector comprising a nucleic acid obtained from the method of claim 1, 31 or 32, or from the nucleic acids defined in any one of claims 24 to 27, 35 and 36.

40. A recombinant vector as defined in claim 39 which is an expression vector.

41. A recombinant host cell comprising the recombinant vector defined in claim 39 or 40.

42. The use of the nucleic acid sequences defined in claim 28 or 33, or obtained from the method of claim 2 and of the protein sequences deduced from said nucleic acid sequences, for the design of a therapeutic agent effective against said microorganisms.

43. The use as defined in claim 42, wherein said therapeutic agent is an antimicrobial agent, a vaccine or a genic therapeutic agent.

44. A method for identification of a microorganism in a test sample, comprising the steps of:

a) obtaining a nucleic acid sequence for a *tuf*, *atpD*, and/or *recA* genes of said microorganisms, and

b) comparing said nucleic acid sequence with the nucleic acid sequences of a bank as defined in claim 5, said repertory comprising a nucleic acid sequence obtained from the nucleic acids of said microorganism, whereby said microorganism is identified when said comparison results in a match between said sequences.